Belgian Virtual Tumourbank: Catalogue module (BVTc)

User manual

UNDER REVISION !

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1. INTRODUCTION

This manual describes how to use the catalogue module of the Belgian Virtual Tumourbank BVTc. The user should be able to retreive the samples he/she is looking for, using the available search criteria. The concept of the BVT applications will be explained to give some insights to obtain better search results.

2. GENERAL INFORMATION

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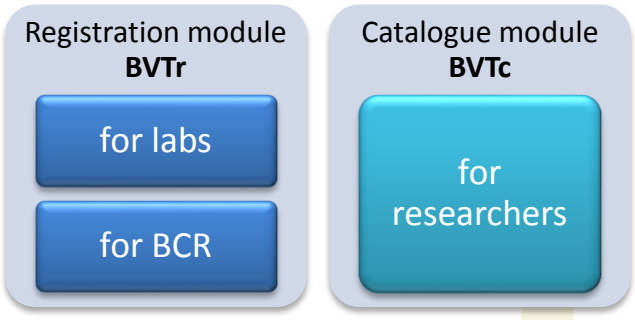
3. CONCEPT OF THE APPLICATION

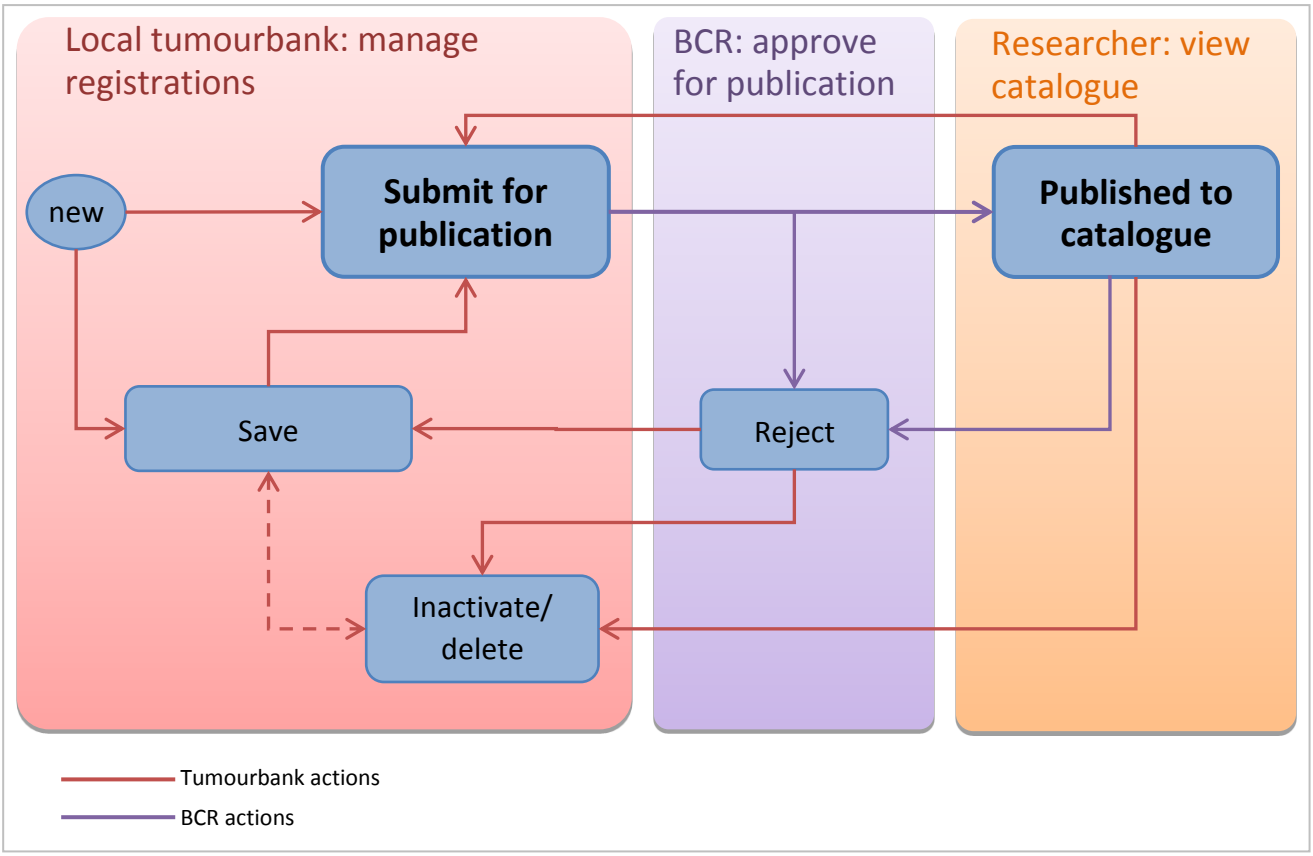
3.1. General

The applications of the Belgian Virtual Tumourbank (BVT) are divided into 2 modules : the BVTr and the BVTc.



This manual contains information about the **BVTc for researchers**.

3.2. Data flow of the BVT



Each sample registration has a well-defined state, that defines which specific actions are allowed to be executed. The BVTr application (registration module) will allow the local tumourbank and the BCR to populate the catalogue. Some important principles:

- Each lab (local tumourbank) will be able to view all its registrations, but will not be able to view another lab's registrations.
- Each lab is responsible for its own registrations.
- The BCR will be able to view all "submitted" registrations from all labs.
- The BCR will view the submitted registrations and approve them for publication to the catalogue. If registrations are erroneous or identifiable towards the donor, they will be rejected back to the lab for correction or inactivation/deletion.
- All published registrations will be available in the catalogue for query. The data will be codified, i.e. it will not be possible to re-identify the donor.
- Data are structured using a predefined dataset, with minimal required fields. Historical data (i.e. data of samples from before 2010) have less required fields.

3.3. Dataset and data content/validation

Data Element (Variable Name)	Required	Required for data before 2010	Visible in catalogue
General variables			
Laboratory			X
Creation date			
Update date			
Reference ID			X
Patient variables			
SSIN	X		
Gender	X	X	X
Birth date	X	X	
Age			X
Patient Opposition	X	X	
Technical variables			
Sample ID	X	X	X
Biopsy number	X		
Sample Date	X	X	X (only year)
Conservation mode	X	X	X
Comments other conservation mode			X
Conservation delay	X		X
Autopsy?			X
Available materials	X		X
Comments other available materials			X
Technical remarks			
Oncological variables			
Type of sample	X	X	X
Comment if other sample type			X
Sample localisation	X	X	X
Localisation primary T if meta			X
Laterality			X
Morphology	X	X	X
Behaviour	X	X	X
Degree of differentiation			X
pT			X
pN			X
pM			X
Oncological remarks			
BCR variables			
cT			X
cN			X
cM			X
Quality Control Result			
Historical Data			
Error Comment			
BCR Comment			

Every variable in the dataset has its own defined format and validation rules. You can find more information about the variables in appendix 1 (see 5).

3.4. Classifications

The tumours in the Belgian Virtual Tumourbank are classified according to the internationally acknowledged ICD-O classification (International Classification of Diseases – Oncology) and the TNM of the UICC (http://www.uicc.org/resources/tnm). These classifications are available in different versions, depending on the year in which the tumour occurred:

Sample Year	ICD-O	TNM
…	ICD-O-2	TNM 4
1998		
1999		TNM 5
2000		
2001		
2002	ICD-O-3	
2003		TNM 6
2004		
2005		
2006		
2007		
2008		
2009		
2010		TNM 7
…		

3.5. Authentication via eHealth with eID

The BVTc is a secured web application, where the identity of the user will be verified (authentication). For this you need an electronic identity card.

To be able to use the **eID** services, you should have installed on your computer:

- A card reader
- Software to read electronic identity cards
  (free via http://eid.belgium.be/fr/Comment_installer_l_eID/Quick_Install/, click on corresponding icon)

You will need to know the PIN code of your eID to be able to login to the BVTc with your eID.

More information is also available on the eHealth website:
https://www.ehealth.fgov.be/fr/acceder-au-portail-ehealth/eid

4. WORKING WITH BVTc

4.1. Start

4.1.1. System requirements

This application will work best with Internet Explorer 8 or 9, or Firefox 5 or 6.

4.1.2. Web address BVTc

You can reach the catalogue module of the BVT by the following link:
https://www.virtualtumourbank.be/bvtc
The links are available via the BVT website www.virtualtumourbank.be as well

4.1.3. Connection procedure eHealth with eID

More information about eID: see paragraph 3.5.

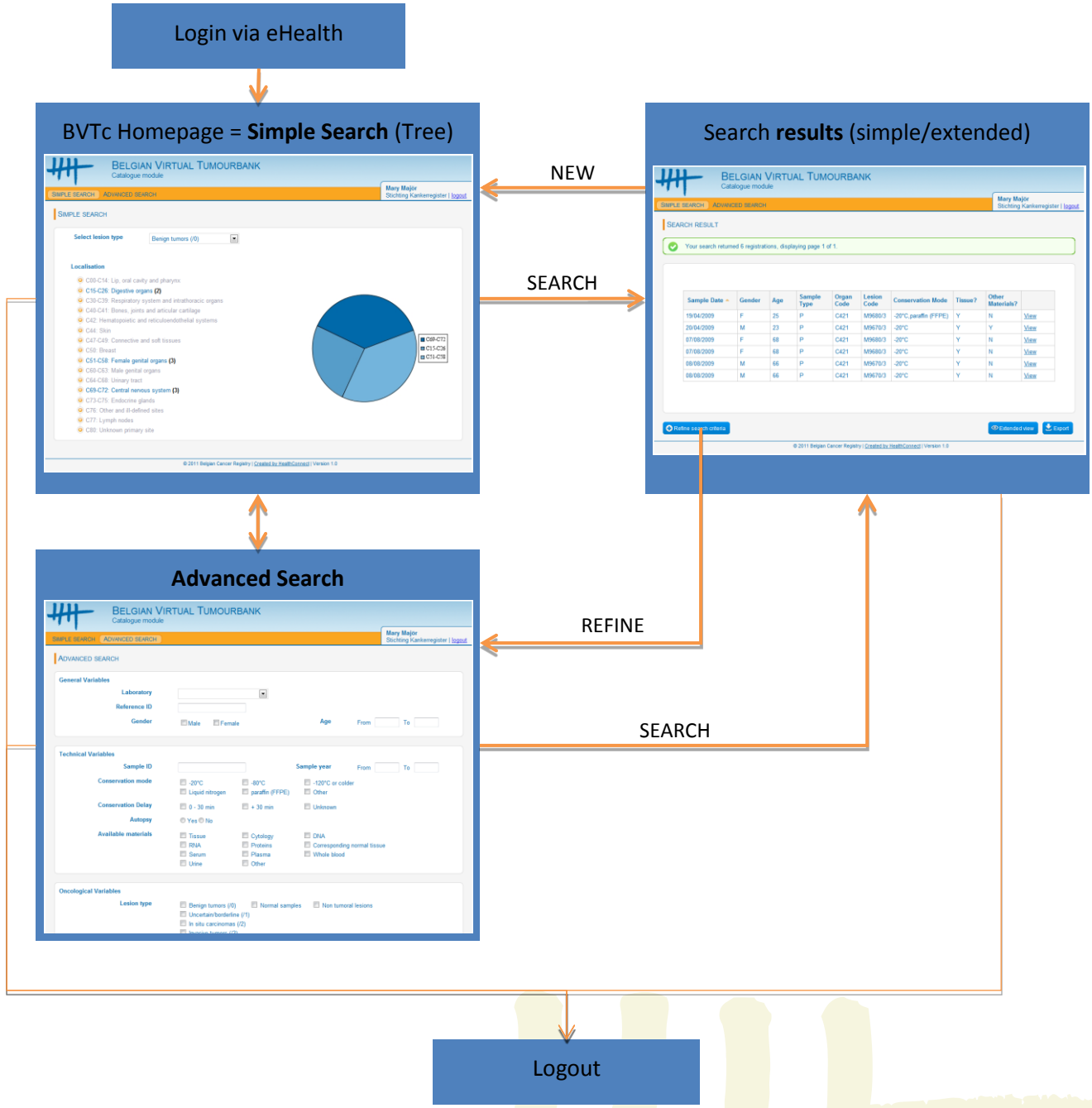
- Enter the url above in the web browser
- Click on 'Login'
- Insert your eID in the card reader
- Click on 'identification via electronic identity card'
- Select the appropriate certificate and enter your PIN code
- Choose the label 'Identification as a member of an organisation', select the organisation of the Belgian Cancer Registry and click 'OK'.
- You will be forwarded to the homepage of the BVTc
- It is necessary to navigate throughout the application with the buttons within the application itself (not those from your web browser).

Error connections can occur. In this case, it is advised to completely close your internet browser and to restart the connection procedure. If the problem persists, you can contact the Cancer Registry and mention the displayed ticket number (if applicable).

When the application is not used for 30 minutes, the session will automatically expire and you will be disconnected.

4.1.4. BVTc Navigation

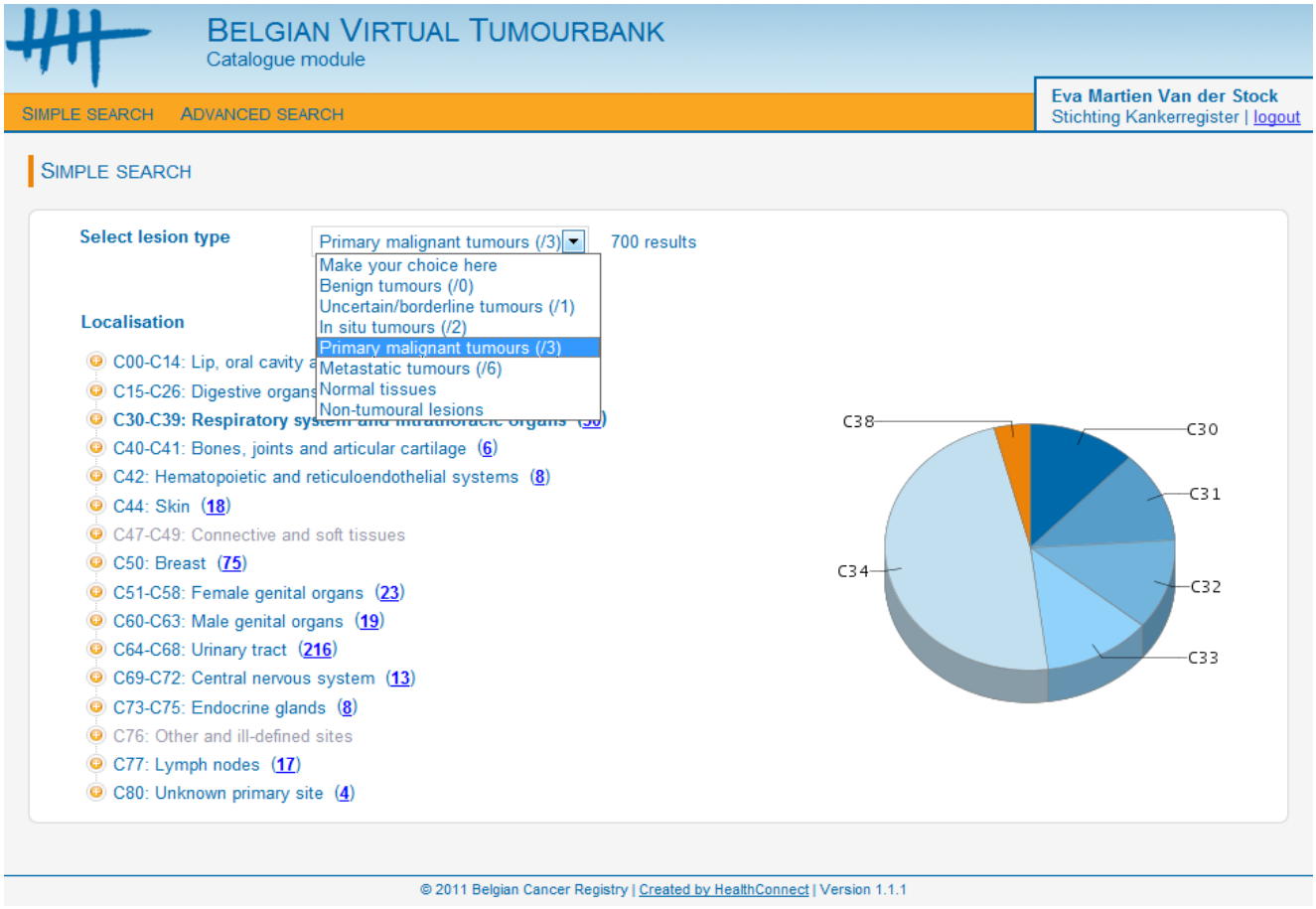
The navigation in the BVTc is pretty simple and intuitive: you can perform a quick simple search in the homepage, or you can select other (multiple) criteria in the advanced search section. These two menus are always accessible via the links in the orange toolbar. The results are displayed as a list that can be downloaded in excel format.



4.2. Simple Search

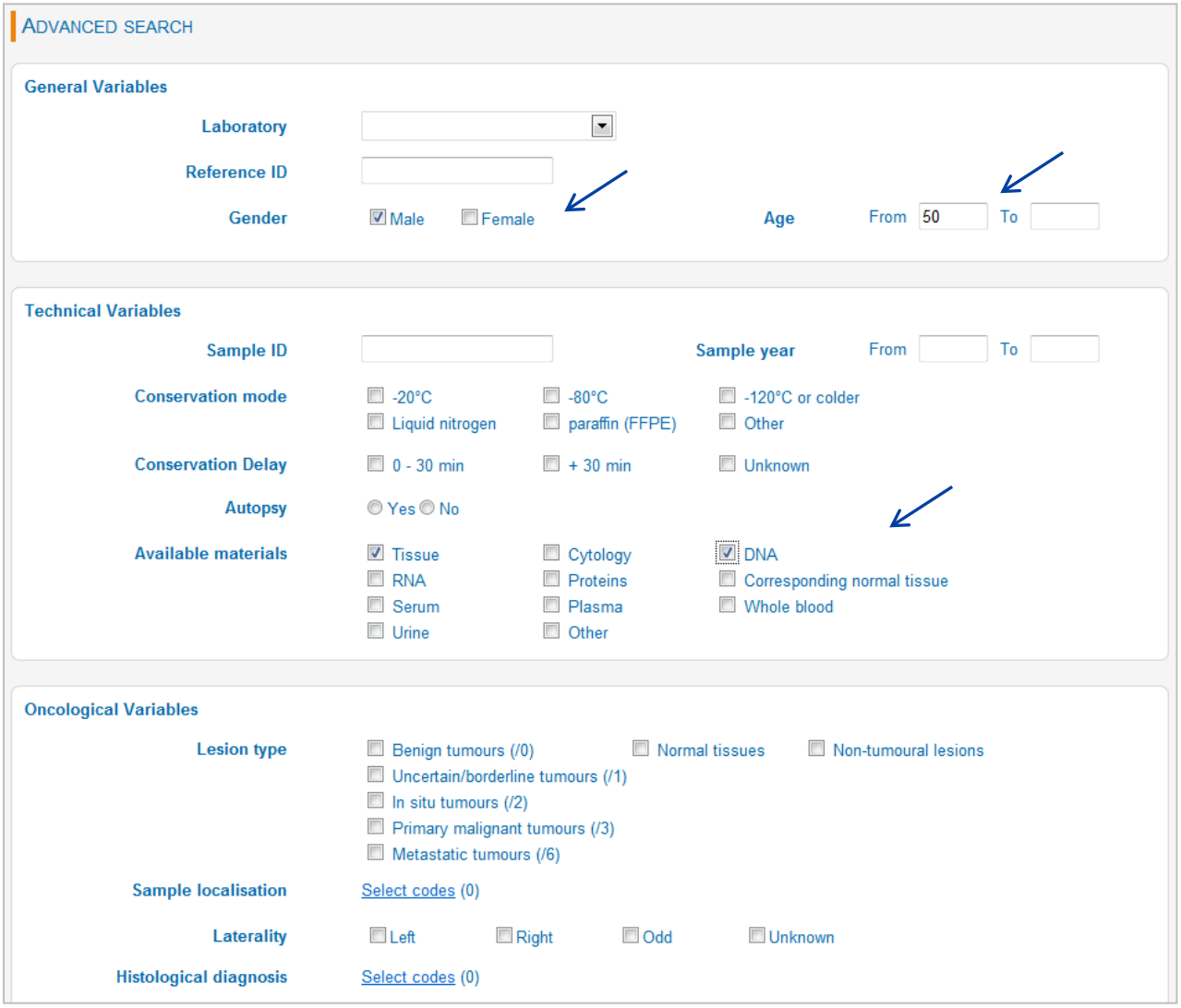
On the simple search page, you can visualize the distribution of the samples available in the virtual tumourbank, according to the type of lesion and organ localisation (using ICD-O classification).

First select the type of lesion, then click in the tree structure on a plus sign or category name to expand the different levels. Between brackets you find the amount of samples available for the given category or code. Simply click on this number to go to the result list and view the individual registrations.



4.3. Advanced Search

You can access this page by clicking in the orange toolbar on "Advanced search", or by clicking "Refine search criteria" when you already performed a search action (this last option remembers your previous search criteria).

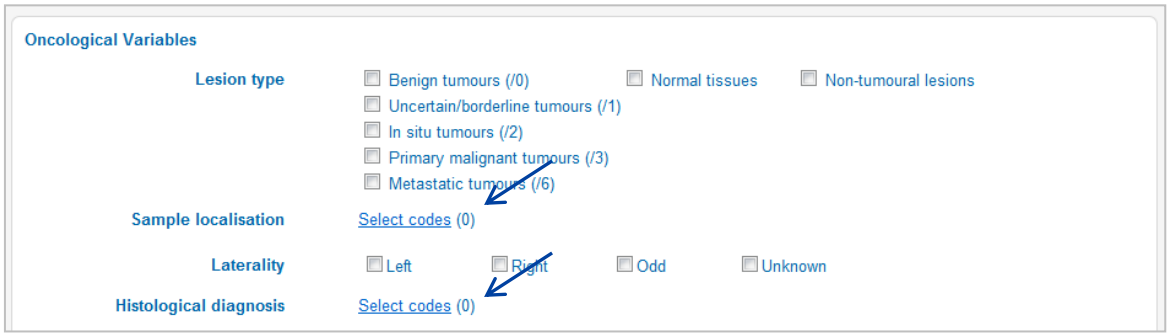


All the searchable variables are displayed on the screen. Every filled or selected variable will be integrated in the search action, with:

- the AND logic between the parameters
  e.g. "male" AND "from 50 years" = all males from 50 years
- and the OR logic between the selected options within a parameter
  e.g. "Tissue" OR "DNA" in Available materials = all tissue samples and all DNA samples

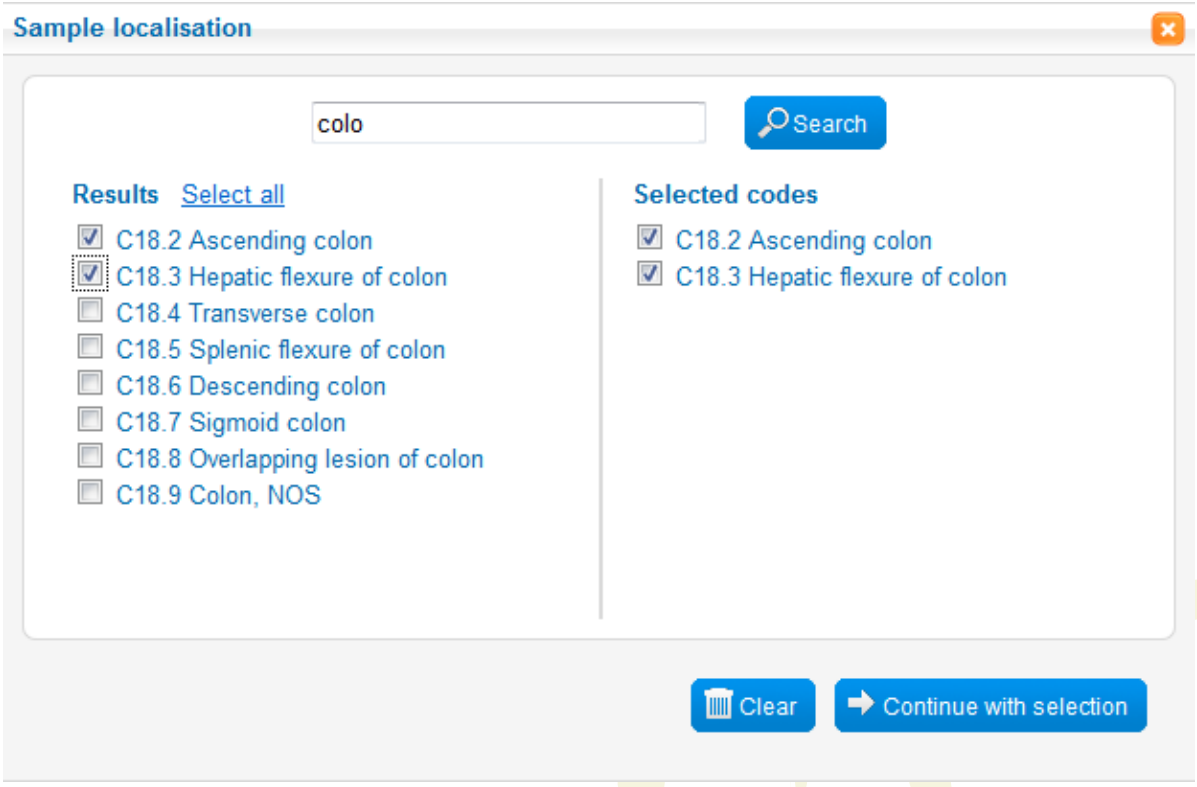
Select codes

In the advanced search tab there are 2 options to select codes: for the sample localisation and for the histological diagnosis.



When clicking this option a pop-up window appears that allows you select the organs of morphologies of year interest.

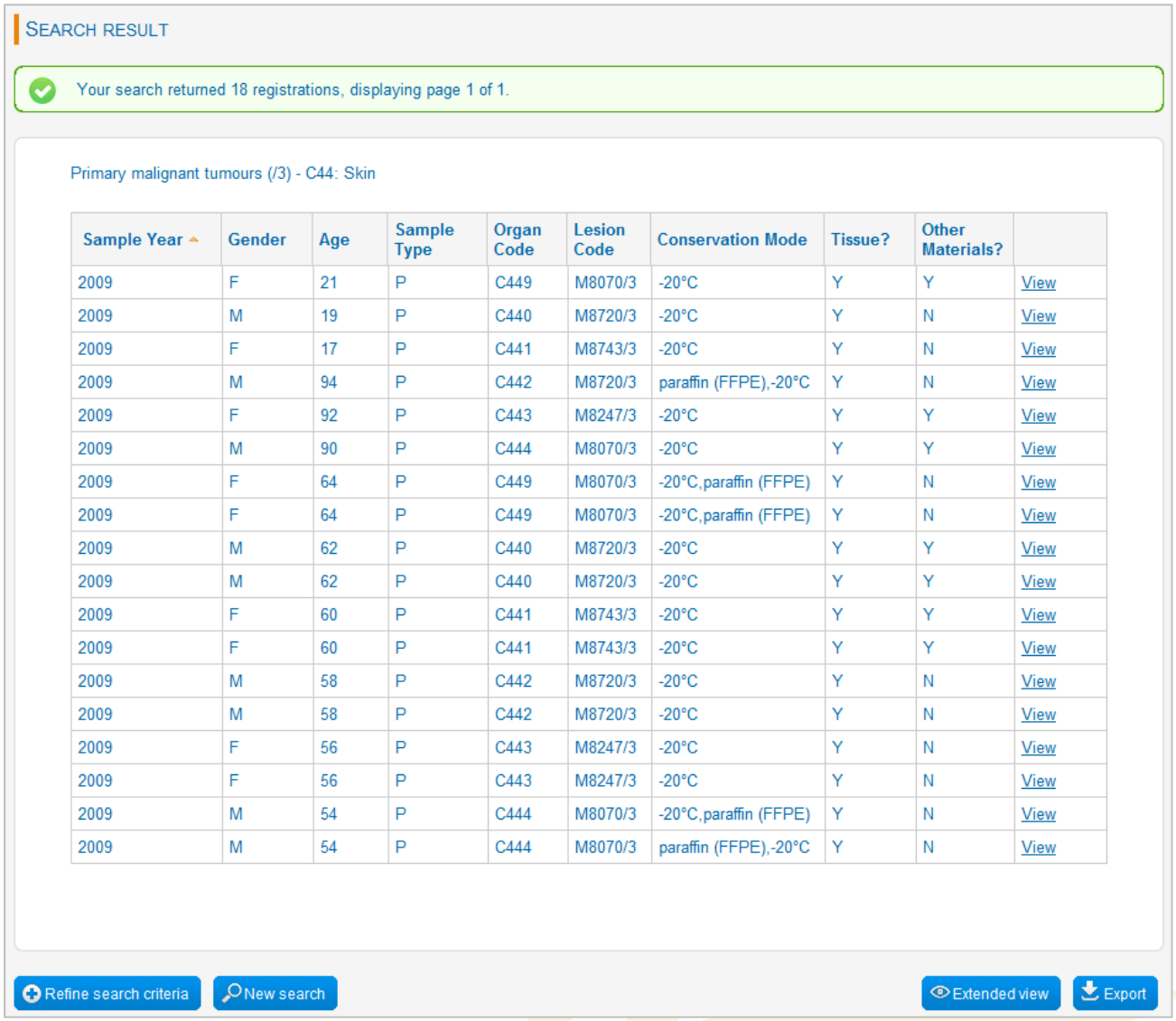
In the example below a search is shown on sample localisation to retrieve colon samples. By just entering the first letters (e.g. colo) and pressing the *search* button the application gives you all possible codes (in this case of the colon). After this the samples of interest can be indicated by checking them (e.g. ascending colon and hepatic flexure of colon). All selected samples will be queried if "*continue with selection"* is pressed.



4.4. Viewing search results

4.4.1. Result list

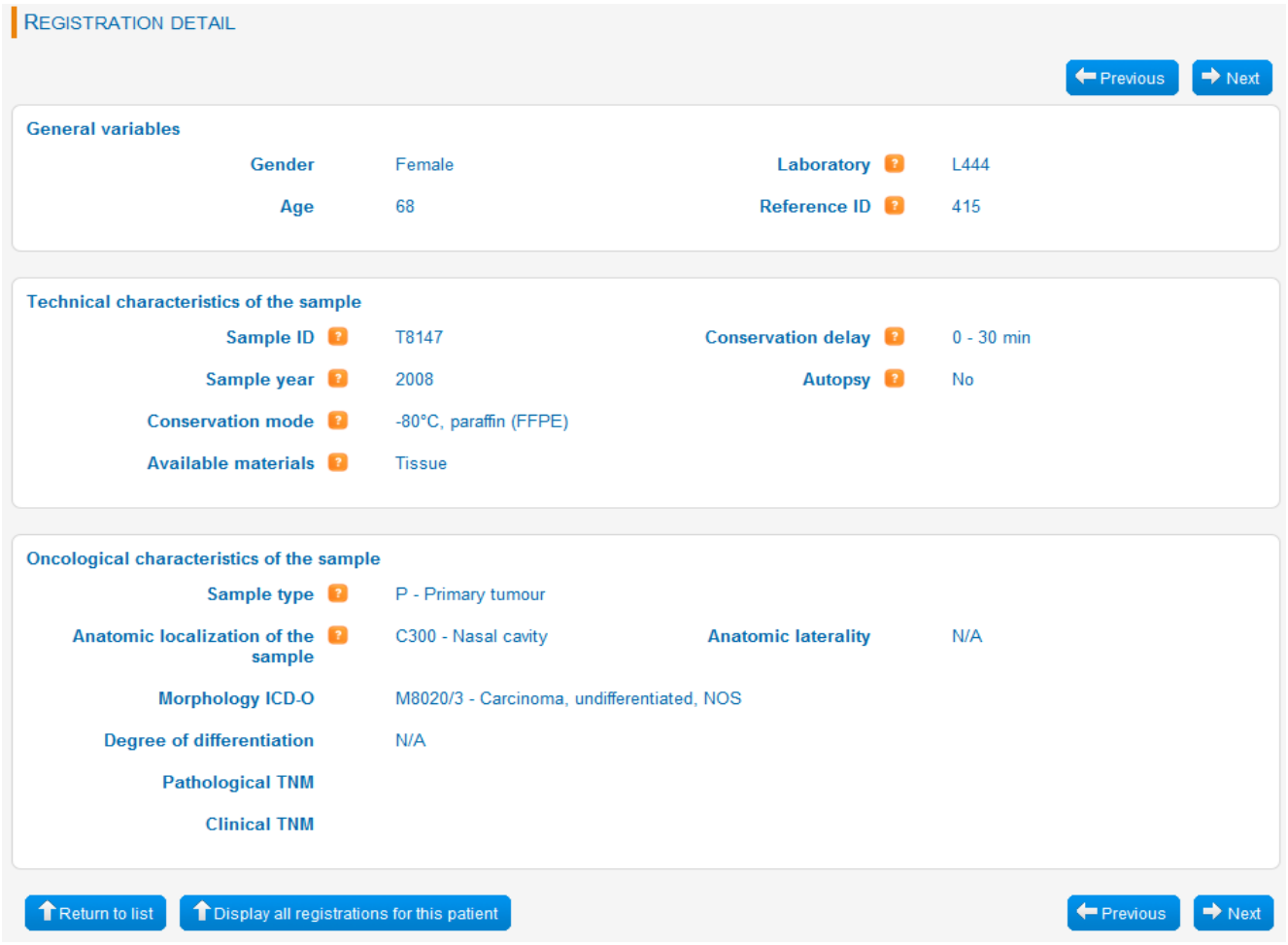
At first, the results will always be displayed in a list.
The total number of registrations is visible, as well as the search criteria selected in the simple search page.
You can switch to extended view to see more parameters for the registrations.
You can click left of each registration to view the detail page.
You can download an excel version of this result list by clicking on 'Export'.
From this selection, you can refine your search with additional criteria, or start a new search.
When you move with your cursor to a specific abbreviation (like in sample type, organ code and lesion code), the description of that code will be displayed underneath the cursor.



Sample Year	Gender	Age	Sample Type	Organ Code	Lesion Code	Conservation Mode	Tissue?	Other Materials?	
2009	F	21	P	C449	M8070/3	-20°C	Y	Y	View
2009	M	19	P	C440	M8720/3	-20°C	Y	N	View
2009	F	17	P	C441	M8743/3	-20°C	Y	N	View
2009	M	94	P	C442	M8720/3	paraffin (FFPE),-20°C	Y	N	View
2009	F	92	P	C443	M8247/3	-20°C	Y	Y	View
2009	M	90	P	C444	M8070/3	-20°C	Y	Y	View
2009	F	64	P	C449	M8070/3	-20°C,paraffin (FFPE)	Y	N	View
2009	F	64	P	C449	M8070/3	-20°C,paraffin (FFPE)	Y	N	View
2009	M	62	P	C440	M8720/3	-20°C	Y	Y	View
2009	M	62	P	C440	M8720/3	-20°C	Y	Y	View
2009	F	60	P	C441	M8743/3	-20°C	Y	Y	View
2009	F	60	P	C441	M8743/3	-20°C	Y	Y	View
2009	M	58	P	C442	M8720/3	-20°C	Y	N	View
2009	M	58	P	C442	M8720/3	-20°C	Y	N	View
2009	F	56	P	C443	M8247/3	-20°C	Y	N	View
2009	F	56	P	C443	M8247/3	-20°C	Y	N	View
2009	M	54	P	C444	M8070/3	-20°C,paraffin (FFPE)	Y	N	View
2009	M	54	P	C444	M8070/3	paraffin (FFPE),-20°C	Y	N	View

4.4.2. Detail page

The detail page displays all available variables of a registration. You can navigate from one registration to another (Previous-Next), and you can return to the search result list. If you click on "Display all registrations for this patient", you can view all available samples from the same donor.



5. APPENDIX: The different BVTc search variables

Variable Name	Control type	Possible values		Description
General variables				
Laboratory	list			Unique code identifying the originating laboratory.
Reference ID	text box			Unique registration code for the Belgian Virtual Tumourbank, to be used during communications between the researcher and the Cancer Registry
Gender	checkboxes	Male	M	Gender of the patient
		Female	F	
Age	range			Age of the patient at the time of resection, obtained by subtracting the sample date from the birth date
Technical variables				
Sample ID	text box			unique and non-identifying code of the sample within the local tumourbank
Sample Year	range			year deduced from the sample date, which is the date at which the sample was fixed for the tumourbank
Conservation mode	checkboxes	-20°C		indicates the various modes of conservation used for this sample in the local tumourbank
		-80°C		
		-120°C or colder		
		Liquid nitrogen		
		paraffin (FFPE)		
		Other		
Conservation delay	checkboxes	0 - 30 min		indicates the time elapsed between the removal from the patient and the fixation of the sample
		+ 30 min		
		Unknown		
Include autopsy samples	checkbox	yes	Y	indicates whether the search should include autopsy samples or not
Available materials	checkboxes	Tissue		indicates which various types of materials are available in the tumourbank for the selected sample
		Cytology		
		DNA		
		RNA		
		Proteins		
		Corresponding normal tissue		
		Serum		
		Plasma		
		Whole blood		
		Urine		

		Other		
Variable Name	**Control type**	**Possible values**		**Description**
Oncological variables				
Lesion type	checkboxes	Benign tumours	/0	indicates the lesion type of the sample in the local tumourbank
		Uncertain/borderline tumours	/1	
		In situ tumours	/2	
		Primary malignant tumours	/3	
		Metastatic tumours	/6	
		Normal Tissue		
		Non-tumoural lesions		
Non-tumoural lesions	text box			Specifies the non-tumoural lesion type. This is a free field so the value is not guaranteed to have a standard terminology
Sample localisation	list	ICDO code lists		Anatomic localization of the sampled specimen. It can be different from the primary tumour localization
Localisation primary T if meta	list	ICDO code lists		Anatomic localization of the primary tumour
Laterality	checkboxes	Left		Anatomic side from which the sample was taken
		Right		
		Odd		
		Unknown		
Morphology	list	ICDO code lists		Morphology of the sampled tumour
Degree of differentiation	checkboxes	Well differentiated	1	Tumour differentiation (1-4 for most tumours; 5-8 for haematological tumours). Be aware, particularly in case of haematological diseases, that the differentiation grade is not always completed by the tumourbank.
		Moderately differentiated	2	
		Poorly differentiated	3	
		Undifferentiated (anaplastic)	4	
		T-cell	5	
		B-cell	6	
		Null-cell	7	
		NK-cell	8	
		Unknown	9	
pT	checkboxes	TNM code lists		Pathological TNM. The selected digit(s) represents tumours with a category starting with this digit.
pN				
pM				
cT	checkboxes	TNM code lists		Clinical TNM. The selected digit(s) represents tumours with a category starting with
cN				

cM				this digit.